

1 What is claimed is:

2 1. An integrated circuit package for holding an integrated circuit die and
3 connecting a set of circuit bond pads on the die to a set of package bond
4 pads disposed on a first surface of the package, the package bond pads being
5 arranged in a set of package bond pad modules such that at least one pair of
6 individual package bond pads is disposed with a package bond pad module
7 overlap in an overlap area along a transverse axis extending substantially
8 perpendicular to the die, a first package bond pad of said pair being
9 connected to a first via positioned inward of said overlap area and a second
10 package bond pad of said pair being connected to a second via positioned
11 outward of said overlap area, all of said first package bond pad, said first via,
12 said second package bond pad and said second via being disposed within
13 one of said package bond pad modules and forming a via submodule, each of
14 said package bond pad modules having a package module pitch along a
15 longitudinal axis parallel to a side of said integrated circuit die.

16 2. A package according to claim 1, in which each package bond pad
17 module contains a subset of bond pads equal in number to a corresponding
18 number of circuit bond pads disposed in said die within said package module
19 pitch.

1 3. A package according to claim 1, in which at least one connection for
2 DC power passes through a via submodule located along said transverse axis
3 at a first position.

4 4. A package according to claim 3, in which at least two connections for
5 DC power pass through corresponding first and second via submodules
6 located at said first position along said transverse axis and in separate
7 package bond pad modules.

8 5. A package according to claim 1, in which no connection for DC power
9 passes along a conductive member that passes substantially parallel to a
10 longitudinal axis substantially perpendicular to said transverse axis through
11 substantially all of a subset of package bond pad modules on an edge of said
12 die.

13 6. A package according to claim 5, in which at least one connection for
14 DC power passes through a via submodule located along said transverse axis
15 at a first position.

16 7. A package according to claim 6, in which at least two connections for
17 DC power pass through a single via submodule located at a first position
18 along said transverse axis.

1 8. A package according to claim 7, in which at least two connections for
2 DC power pass through corresponding first and second via submodules
3 located at said first position along said transverse axis and in separate
4 package bond pad modules.

5 9. A package according to claim 6, in which no connection for DC power
6 passes along a conductive member that passes substantially parallel to a
7 longitudinal axis substantially perpendicular to said transverse axis through
8 substantially all of a subset of package bond pad modules on an edge of said
9 die.

10 10. An integrated circuit package for holding an integrated circuit die and
11 connecting a set of circuit bond pads on the die to a set of package bond
12 pads disposed on a first surface of the package, the package bond pads being
13 arranged in a set of package bond pad modules such that at least two pairs of
14 individual package bond pads are disposed having a package bond pad
15 module overlap in at least two overlap areas along a transverse axis
16 extending substantially perpendicular to the die, a first package bond pad of
17 each of said pairs being connected to a first via positioned inward of said
18 overlap area and a second package bond pad of each of said pairs being
19 connected to a second via positioned outward of said overlap area, all of said
20 pairs of package bond pads and associated vias being disposed within one of
21 said package bond pad modules and forming a via submodule, each of said

1 package bond pad modules having a package module pitch along a
2 longitudinal axis parallel to a side of said integrated circuit die.

3 11. A package according to claim 10, in which each package bond pad
4 module contains a subset of bond pads equal in number to a corresponding
5 number of circuit bond pads disposed in said die within said package module
6 pitch.

7 12. A package according to claim 10, in which at least one connection for
8 DC power passes through a via submodule located along said transverse axis
9 at a first position.

10 13. A package according to claim 12, in which at least two connections
11 for DC power pass through corresponding first and second via submodules
12 located at said first position along said transverse axis and in separate
13 package bond pad modules.

14 14. A package according to claim 10, in which no connection for DC
15 power passes along a conductive member that passes substantially parallel to
16 a longitudinal axis substantially perpendicular to said transverse axis
17 through substantially all of a subset of package bond pad modules on an
18 edge of said die.

1 15. A package according to claim 14, in which each package bond pad
2 module contains a subset of bond pads equal in number to a corresponding
3 number of circuit bond pads disposed in said die within said package module
4 pitch.

5 16. A package according to claim 10, in which at least one connection for
6 DC power passes through a via submodule located along said transverse axis
7 at a first position.

8 17. A package according to claim 10, in which at least two connections
9 for DC power pass through a single via submodule located at a first position
10 along said transverse axis.

11 18. A method of forming an integrated circuit package for holding an
12 integrated circuit die and connecting a set of circuit bond pads on the die to a
13 set of package bond pads disposed on a first surface of the package, the
14 package bond pads being arranged in a set of package bond pad modules
15 such that at least one pair of individual package bond pads is disposed in a
16 package bond pad module overlap in an overlap area along a transverse axis
17 extending substantially perpendicular to the die comprising the steps of:

18 forming an insulating substrate including a set of vias extending from a top
19 surface to a set of lower interconnection members;

1 forming said set of bond pad modules, including forming said pair of
2 individual package bond pads with a first package bond pad of said pair
3 being connected to a first via positioned inward of said overlap area and a
4 second package bond pad of said pair being connected to a second via
5 positioned outward of said overlap area, all of said first package bond pad,
6 said first via, said second package bond pad and said second via being
7 disposed within one of said package bond pad modules and forming a via
8 submodule, such that each of said package bond pad modules has a package
9 module pitch along a longitudinal axis parallel to a side of said integrated
10 circuit die.

11 19. A package according to claim 18, further comprising a step of forming
12 at least one connection for DC power passing through a via submodule
13 located along said transverse axis at a first position.

14 20. A package according to claim 18, further comprising a step of forming
15 at least two connections for DC power passing through corresponding first
16 and second via submodules located at said first position along said
17 transverse axis and in separate package bond pad modules.